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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/724,461	11/26/2003	Peter Michael Edic	RD29085-6	9882
6147	7590	06/27/2005	EXAMINER	
GENERAL ELECTRIC COMPANY GLOBAL RESEARCH PATENT DOCKET RM. BLDG. K1-4A59 NISKAYUNA, NY 12309			THOMAS, COURTNEY D	
			ART UNIT	PAPER NUMBER
			2882	

DATE MAILED: 06/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/724,461

Applicant(s)

EDIC ET AL.

Examiner

Courtney Thomas

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8m

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/26/03
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claims 1, 4, 5, 6, 8, 10, 11, 14 and 15 are objected to because of the following informalities:
 2. Claim 1, line 8 recites: "... the tissue dynamics." Examiner notes there is no antecedent basis for the use of this term (see also **claim 4**, line 11; **claim 6**, line 7; **claim 8**, line 8; **claim 10**, line 11; **claim 14**, line 8; **claim 15**, line 11).
 3. Claim 1, line 10 recites: "... the contrast dynamics." Examiner notes there is no antecedent basis for the use of this term (see also **claim 4**, line 12; **claim 6**, line 8; **claim 8**, line 13; **claim 10**, line 16; **claim 14**, line 13; **claim 15**, line 16).
 4. Claim 1, line 10, recites: "... the tissue." Examiner notes there is no antecedent basis for the use of this term (see also **claim 4**, line 12; **claim 6**, line 8; **claim 8**, line 13; **claim 10**, line 16; **claim 14**, line 13; **claim 15**, line 16).
 5. Claim 5, line 2 recites: "... the images." Examiner notes there is no antecedent basis for the use of this term.
 6. Claim 6, line 7 recites: "... the spatially stationary organ." Examiner notes there is no antecedent basis for the use of this term.
 7. Claim 11, line 3 recites: "... the dose." Examiner notes there is no antecedent basis for the use of this term.
 8. The claims have not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the claims.

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9. Appropriate correction is required.

Double Patenting

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claims 1-15 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-28 of **U.S. Patent No. 6,888,914** in view of **Wilson et al. (1999)** and **Edic (U.S. Patent 6,353,653)**. U.S. Patent No. 6,888,914 claims a method and apparatus for computing volumetric perfusion in a spatially stationary organ using a computed tomography (CT) imaging system comprising the steps of:

12. a) positioning an area detector such that the detector encompasses a spatially stationary organ within a field of view of the imaging system for all view angles;

13. b) operating the CT imaging system in a cine mode to acquire a plurality of projection data representative of tissue dynamics in the spatially stationary organ;

14. c) generating reconstructions of contrast dynamics of tissue using the projection data and

15. d) computing volumetric perfusion using reconstructions of projection data.

16. U.S. Patent No. 6,888,914 does not explicitly claim a step comprising: interpolating transmission data at each view angle to a particular time and temporally filtering volume

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elements of reconstructed data and computing volumetric perfusion using the temporally filtered signals.

17. Wilson et al. teach that temporal filtering of X-ray image data is employed in practice to reduce noise artifacts in image sequences, thereby improving overall image quality (see abstract; pp. 22-23, 29).

18. Edic discloses a step of interpolating transmitted data at views at a particular time to generate image sequences and to further reduce the occurrence of image artifacts (see abstract; columns 1 and 2).

19. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method and apparatus of U.S. Patent 6,888,914 such that it incorporated the steps of interpolating transmission data at each view angle to a particular time and temporally filtering volume elements of reconstructed data and computing volumetric perfusion using the temporally filtered signals. One would have been motivated to make such a modification for the purpose of generating image sequences of an object/region of interest with high image quality as suggested by Wilson et al. (see abstract; pp. 22-23, 29) and Edic (see abstract; columns 1 and 2).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Courtney Thomas whose telephone number is (571) 272-2496.

The examiner can normally be reached on M - F (9 am - 5 pm).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272 2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink that reads "Courtney Thomas". The signature is written in a cursive, flowing style.

Courtney Thomas
Examiner
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